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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,104	12/11/2003	Martin Kamp	Nanoplus-2	1655

7265 7590 11/21/2005

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EXAMINER

VANNUCCI, JAMES

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 11/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EL

Office Action Summary	Application No.	Applicant(s)	
	10/734,104	KAMP ET AL.	
	Examiner	Art Unit	
	Jim Vannucci	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8-23-04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7, the meaning of the phrase "laser structure so as to" in recitation c) is not clear, and it also does not appear to be a process step.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Westbrook(4,754,459).

Claim 1, figure 1 discloses a semiconductor substrate(1), a laser layer(3) on the semiconductor substrate(1), at least two waveguide ridges(11 & 12) located at a distance from the laser layer(3), and a first strip-shaped lattice structure(9) of alternating portions of conducting and less conducting material located on the flat portions of the

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surface between the ridges(col. 4, lines 3-5) and at a distance from the laser layer(3) above the laser layer.

Claim 2, figure 1 discloses a second strip-shaped lattice structure(not numbered) located lateral to the two outermost of the waveguide ridges(11 & 12) on the flat portions of the surfaces lateral to the outermost ridges and at a distance from the laser layer above the laser layer.

Claim 3, the lattice structure disclosed in figure 1 is located on a barrier layer(4) that defines the position of the lattice structure relative the laser layer(3).

Claim 4, the lattice structure(9) disclosed in figure 1 comprises a metal(col. 4, lines 3-5).

Claim 6, figure 1 discloses a first strip-shaped lattice structure(9) that is located adjacent to sides of the waveguide ridges(11 & 12) with the width and spacing of the waveguide ridges selected such that base points of the sides of the waveguide ridges are located in a peripheral region of radiation from the active zone(3) of the laser layer.

5. Claims 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Fiddymment et al.(4,805,184).

Claim 7, Fiddymment discloses producing a complete semiconductor laser structure(fig. 5) in an epitaxial process(col. 5, line 35), forming at least two waveguide ridges by removing material from the semiconductor(col. 6, lines 58-60), forming carrier surfaces between the waveguide ridges and lateral to the outer of the waveguide

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ridges(col. 5, lines 33-45), and applying a lattice structure(col. 5, lines 46-48) to the carrier surfaces.

Claim 8, the step of forming an insulating layer(5) on the carrier surfaces is disclosed.

Claim 9, a lattice structure of alternating portions of a conductive and less conductive material is disclosed(col. 5, lines 46-48).

Claim 10, the step of applying a lattice structure that includes applying a metallic lattice structure with a lithographic process, comprising the steps of performing a lithographic process to create a lithographic structure and metallization of the lithographic structure is disclosed(col. 5, lines 46-53).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Westbrook in view of Forchel et al.(6,846,689).

Westbrook does not disclose a specific metal type.

Claim 5, Forchel disclose a chromium or a chromium alloy metal for advantageous operational effects(col. 3, lines 1-12).

It would have been obvious to one of ordinary skill in the art at the time of the

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invention to use a chromium metal as disclosed in Forchel in the device disclosed in Westbrook for improved performance as disclosed in Forchel.

Correspondence

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Jim Vannucci whose phone number is (571) 272-1820.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (571) 273-8300.


James Vannucci